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SNOW SURVEYS AND IRRIGATION WATER FORECASTS

for the

RIO GRANDE DRAINAGE BASIN

April 1, 1940

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Issued by the
United States Department of Agriculture
Soil Conservation Service
Division of Irrigation
In Cooperation with
The Colorado Agricultural Experiment Station
Colorado State College
Fort Collins, Colorado

April 6, 1940

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for the

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April 1, 1954

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RIO GRANDE BASIN

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The following data pertaining to snow surveys and irrigation water-supply forecasts are provided by the Division of Irrigation, Soil Conservation Service of the U. S. Department of Agriculture, in cooperation with other Federal Bureaus, State Departments, and local organizations. The snow measurements are made principally by field personnel of the U. S. Forest Service and Colorado State Engineer. This work is otherwise conducted cooperatively with the State Engineers of Colorado and New Mexico, Colorado Agricultural Experiment Station, and various municipalities, irrigation associations and others. Precipitation records are supplied by the U. S. Weather Bureau.

P R E C I P I T A T I O N D A T A (Based on incomplete returns)

WATERSHED	STATE	Precipitation October 1 to March 31		Departure from Normal		Precipitation March		Departure from Normal	
		Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches
Canadian	New Mexico	3.79	-0.14	0.76	-0.02	0.76	-0.02	0.76	-0.02
Rio Grande	Colorado	6.10	-1.07	0.84	-0.82	0.84	-0.82	0.84	-0.82
Rio Grande	New Mexico	6.37	-0.01	1.19	-0.02	1.19	-0.02	1.19	-0.02
Pecos	New Mexico	3.97	-0.30	0.35	-0.42	0.35	-0.42	0.35	-0.42

SUMMARY OF APRIL 1 SNOW SURVEYS AND COMPARISON OF DATA WITH THAT OF PREVIOUS YEARS BY WATERSHEDS

WATERSHEDS	Snow Depth		Water Content		Number Courses Report- ing 1940	Snow Density		1940 Water Content in percent of	
	Five Year Avg.*	1939	1940	Five Year Avg.*		Five Year Avg.*	1939	Five Year Avg.*	1939
Rio Grande	In. 22.7	In. 15.2	In. 12.3	In. 7.9	22	Percent 35	Percent 36	Percent 63	93
Canadian River	In. 10.0	In. 1.4	In. 4.9	In. 3.1	2	Percent 31	Percent 50	Percent 58	257

*Some for shorter periods.

CUTLOOK

Precipitation in New Mexico and in the San Luis Valley in Colorado during March was below normal, and there is also a deficiency in the accumulated precipitation since October 1, 1939. On the watershed of the Rio Grande in Colorado the water content of the snow is less than it was last year at this time, but in New Mexico it is greater. On some of the courses all the snow has already disappeared. The average water content of the snow on all the courses on the watershed of the Rio Grande on April 1 was 5.0 inches; last year it was 5.4 inches and the average on this date for the last five years, is 7.9 inches. On the watershed of the Canadian River, the water content of the snow was 1.8 inches on April 1, this year; 0.7 inches on April 1, 1939; and the average on April 1 for the last four years is 3.1 inches.

The condition of the soil moisture is fair in the San Luis Valley, good in the upper Rio Grande Valley in New Mexico, and normal in the lower valley below the Elephant Butte Dam. In the irrigated sections along the Conchas River, the percentage of moisture in the soil is higher than average for this time of the year. Subsoil moisture is generally deficient.

Reservoir storage in the San Luis Valley is 29 percent of what it was a year ago at this time, but 65 percent of what it was two years ago. The El Vado Reservoir has 22 percent more water in storage than it had on April 1, 1939, and 86 percent of the amount in storage on April 1, 1938. Storage in the Elephant Butte and Caballo reservoirs on April 1 was 67 percent of what it was a year ago and 78 percent of what it was two years ago. The Conchas Reservoir, which was recently completed, now has 84,000 acre-feet in storage. Last year at this time it contained 15,480 acre-feet.

The outlook for irrigation water in the San Luis Valley is not favorable at this time. Unless heavier than normal precipitation occurs during the remainder of the year, the runoff will be considerably less than it was last year. Conditions are more favorable in New Mexico and with normal precipitation from now on, the runoff should be about the same as last year. Although the snow cover on the watershed of the Canadian is more than double what it was last year, it is still considerably less than normal and, consequently, the runoff will probably be short again this year unless supplemented by summer storms.

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RIO GRANDE WATERSHED

Summary of Federal and State Cooperative Snow Surveys
Issued April 6, 1940, at Fort Collins, Colo.

Main Drainage and No. Snow Course		Local Drainage	State	Location		Elev.	National Forest	Apr. 1 Snow Course Measurements					
				Locality	Descrip- tion			Av. Snow Depth	1939	1940	1940		
								In.	In.	Avg.	In.	In.	In.
RIO GRANDE													
26	Wolf Creek Pass	South Fork	Colo.	Wolf Cr. Pass	4-37N-2E	10000	Rio Grande	81.8	61.7	41.0	29.4	23.1	15.9
27	Upper Rio Grande	Rio Grande	"	Rio Grande Res.	13-40N-4W	9350	"	16.8	0.0	T	3.8	0.0	T
47	Silver Lakes	Alamosa R.	"	1mi. S. Silver L.	15-36N-5E	9600	"	17.7	12.0	1.2	4.8	3.3	0.5
49	River Springs	Conejos R.	"	10mi. W. Mogote	25-33N-6E	9300	"	23.6	16.4	6.2	7.4	4.6	2.0
74	LaVeta Pass #2	SanCristo Cr.	"	LaVeta Pass	22-28S-70W	9300	SanCristoGr	23.1	22.6	15.5	6.8*	7.2	5.5
75	Ute Ridge	Rio Grande	"	Rio Grande Res.	31-41N-4W	9700	Rio Grande	3.8	0.0	7.7	1.2	0.0	2.4
76	Summitville	Wightman Cr.	"	Summitville	30-37N-4E	11500	"	46.8	55.6	38.0	14.6	15.2	14.0
77	Cumbres Pass #2	Los Pinos R.	"	Cumbres Pass	17-32N-5E	10000	"	69.0	46.8	40.2	27.7	18.3	17.1
80	Santa Maria	N. Clear Cr.	"	Santa Maria Res.	8-41N-2W	9700	"	0.0	0.0	0.0	0.0	0.0	0.0
82	Culebra	Culebra R.	"	12mi. E. San Luis	37-2N105.2W	10000	SanCristoGr.	---	---	28.2	---	---	11.6
84	Fort Garland	Big Ute Cr.	"	6mi. N. Ft. Garland	13-29N-72W	8200	"	---	---	0.0	---	---	0.0
1	Red River	Red River	N. Mex.	6mi. SE. Red River	29-28N-15E	9500	Carson	21.2	4.9	12.0	7.0	2.2	5.1
2	Taos Canyon	Rio de Taos	"	14mi. E. Taos	10-25N-15E	9000	"	12.9	5.1	6.7	4.5	2.4	3.1
4	Aspen Grove	Rio En Medio	"	10mi. NE. Santa Fe	12-18N-10E	9100	Santa Fe	4.5	2.8	8.5	1.4	0.8	2.9
5	Lee Ranch	Jemez Cr.	"	5mi. NW. Bland	3-18N-4E	9050	"	15.5	11.7	11.5	4.8	3.4	4.6
6	Canjilon	Canjilon Cr.	"	8mi. NE. Canjilon	4-26N-6E	9500	Carson	47.6	32.4	41.4	20.8	16.5	21.1
7	Rio Nutrias	Rio Nutrias	"	10mi. SE. Park View	6-27N-5E	7900	"	6.2	0.0	0.0	2.2	0.0	0.0
8	Panchuela	Panchuela Cr.	"	1mi. N. Cowles	34-19N-12E	8500	Santa Fe	0.6	0.0	0.0	0.2	0.0	0.0
9	Hematite Park*	Red River	"	3mi. SE. Red R.	8-28N-15E	9500	Carson	12.4	0.0	5.2	3.7	0.0	1.8
12	Tres Ritos	Agua Piedra	"	7mi. W. Holman	23-22N-13E	9000	"	5.1	1.6	9.4	1.8	0.6	3.8
15	Pay Role	Rock Creek	"	4mi. SE. Hopewell	16-28N-7E	10000	"	---	---	12.3	---	---	4.1
16	Jicarilla	Rock Lake Cr.	"	15mi. S. Dulce	9-29N-1W	8500	Jicarilla Res.	---	---	0.0	---	---	0.0
17	Chama Divide	Willow Creek	"	6mi. W. Chama	36-9N-106.7W	7750	Off Forest	---	---	0.0	---	---	0.0
								22.7	15.2	12.3	7.9	5.4	5.0
CANADIAN													
9	Hematite Park	Moreno Creek	N. Mex.	3mi. SE. Red R.	8-28N-15E	9500	Carson	12.4	0.0	4.9	3.7	0.0	1.8
10	Ocate Mesa	Ocate Creek	"	3mi. E. Black L.	25-24N-16E	9200	Off Forest	7.6	2.9	4.6	2.5	1.4	1.8
								10.0	1.4	4.8	3.1	0.7	1.8

*On adjacent drainage

*Readings on original course.

THE GAZETTE OF INDIA